CALIFORNIA WILDLIFE HABITAT RELATIONSHIPS SYSTEM

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M040 Pocketed Free-tailed Bat Nyctinomops femorosaccus Family: Molossidae Order: Chiroptera Class: Mammalia

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DISTRIBUTION, ABUNDANCE, AND SEASONALITY

The pocketed free-tailed bat is found in Riverside, San Diego, and Imperial cos. This species is rare in California, but is more common in Mexico. Habitats used include pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis.

SPECIFIC HABITAT REQUIREMENTS

Feeding: Feeds on flying insects detected by echolocation high over ponds, streams, or arid desert habitat. Large moths are the principal food, but a wide variety of insects is taken (Easterla and Whitaker 1972). Flight is swift and direct.

Cover: Prefers rock crevices in cliffs as roosting sites. Must drop from the roost to gain flight speed.

Reproduction: Reproduces in rock crevices, caverns, or buildings. Gives birth to one young per year, usually in early July (Sidner 1999).

Water: During dry seasons, utilizes water sources with open access and large surface areas from which to drink (Sidner 1999).

Pattern: Prefers rocky desert areas with high cliffs or rock outcrops.

SPECIES LIFE HISTORY

Activity Patterns: Nocturnal. Probably active yearlong. Emerges from the roost well after sunset, after solar radiation has ceased (Gould 1961). Activity is curtailed by rain.

Seasonal Movements/Migration: Probably a yearlong resident.

Home Range: No data found.

Territory: Usually roosts in small groups. A group of 50-60 was found in San Diego County (Krutzsch 1944b).

Reproduction: Young are born in June and July, peaking in late June. The single litter has 1 young. Lactation occurs in July and August.

Niche: A swift, high-flying species; probably a moth specialist. An instance of predation by the Iyre snake is described by Krutzsch (1944a).

Comments: The status of this species in California is poorly known, but it appears to be rare. The roost described by Krutzsch (1944b) is abandoned, although an active roost is located in Anza Borrego State Park. A California Species of Special Concern (Williams 1986).

REFERENCES

- Barbour, R. W., and W. H. Davis. 1969. Bats of America. Univ. of Kentucky Press, Lexington. 286pp.
- Benson, S. B. 1940. Notes on the pocketed free-tailed bat. J. Mammal. 21:26-29.
- Cockrum, E. L. 1956. Homing, movements and longevity of bats. J. Mammal. 37:48-57.
- Constantine, D. G. 1958. Tadarida femorasacca and Tadarida molassa at Carlsbad Caverns, New Mexico. J. Mammal. 39:293.
- Easterla, D. A. 1973. Ecology of the 18 species of Chiroptera at Big Bend National Park, Texas. Northwest Mo. State Univ. Studies 34:1-165.
- Easterla, D. A., and J. O. Whitaker, Jr. 1972. Food habits of some bats from Big Bend National Park, Texas. J. Mammal. 53:997-890.
- Gould, P. J. 1961. Emergence time of Tadarida in relation to light intensity. J. Mammal. 42:405-407.
- Krutzsch, P. H. 1944a. California lyre snake feeding on the pocketed bat. J. Mammal. 25:410.
- Krutzsch, P. H. 1944b. Notes on the little-known pocketed bat. J. Mammal. 25:201.
- Neil, R. W. 1940. The pocketed bat in California. J. Mammal. 21:356.
- Sidner, R. 1999. Pocketed free-tailed bat: Nyctinomops femorosaccus. Pages 129-130 in Wilson, D. E. and S. Ruff, editors. The Smithsonian book of North American mammals. Smithsonian Institute Press, Washington and London. 750pp.
- Williams, D. F. 1986. Mammalian species of special concern in California. Calif. Dept. Fish and Game, Sacramento. Admin. Rep. 86-1. 112pp.
- Barbour, R. W., and W. H. Davis. 1969. Bats of America. Univ. of Kentucky Press, Lexington. 286pp.
- Benson, S. B. 1947. Comments on migration and hibernation in Tadarida mexicana. J. Mammal. 28:407-408.
- Cockrum, E. L. 1969. Migration in the guano bat, Tadarida brasiliensis. Univ. Kans. Mus. Nat. Hist. Misc. Publ. 51:303-336.
- Constantine, D. G. 1967. Activity patterns of the Mexican free-tailed bat. Univ. New Mexico Publ. Biol. No. 7. 79pp.
- Davis, R. B., C. F. Herreid II, and H. L. Short. 1962. Mexican free-tailed bats in Texas. Ecol. Monogr. 32:311-346.
- Geluso, K. N. 1978. Urine concentrating ability and renal structure of insectivorous bats. J. Mammal. 59:312-323.
- Geluso. K. N., J. S. Altenbach, and D. E. Wilson. 1976. Bat mortality: pesticide poisoning and migratory stress. Science 194:184-186.
- Gosnell, M. 1977. Carlsbad's famous bats are dying off. Natl. Wildl. 15:28-33.
- Herreid, C. F. II. 1963. Temperature regulation of Mexican free-tailed bats in cave habitats. J. Mammal. 44:560-573.
- Herreid, C. F. II. 1967a. Mortaility statistics of young bats. Ecology 48:310-312.
- Herreid, C. F. II. 1967b. Temperature regulation, temperature preference and tolerance, and metabolism of young and adult free-tailed bats. Physicl. Zool. 40:1-22.
- Humphrey, S. R. 1975. Nursery roosts and community diversity of nearctic bats. J. Mammal. 56:321-346.
- Krutzsch, P. H. 1955. Observations on the California mastiff bat. J. Mammal. 36:40-414.
- Mohr, C.E. 1972. The status of threatened species of cave dwelling bats. Bull. Natl. Speleol. Soc. 34:33-47.
- Pagels, J. F. 1975. Temperature regulation, body weight and changes in total body fat of the free-tailed bat, Tadarida brasiliensis cynocephala (LeConte). Comp. Biochem. Physiol.

- 50A:237-246.
- Pagels, J. F., and C. Jones. 1974. Growth and development of the free-tailed bat, Tadarida brasiliensis cynocephala (LeConte). Southwest. Nat. 19:267-276.
- Ross, A. 1961. Notes on food habits of bats. J. Mammal. 42:66-71.
- Ross, A. 1967. Ecological aspects of the food habits of insectivorous bats. Proc. West. Found. Vertebr. Zool. 1:205-264.
- Sherman, H. B. 1937. Breeding habits of the free-tailed bat. J. Mammal. 18:176-187.
- Storer, T. I. 1926. Bats, bat towers, and mosquitoes. J. Mammal. 7:85-90.
- Twente, J. W. 1956. Ecological observations on a colony of Tadarida mexicana. J. Mammal. 37:42-47.
- Villa, B., and E. L. Cockrum. 1962. Migration in the guano bat, Tadarida brasiliensis mexicana (Saussure). J. Mammal. 43:43-64.
- Wilkins, K. T. 1989. Tadarida brasiliensis. Mammal. Species No. 331. 10pp.